PiXORD

H.264 Series 2-Megapixel Network Camera

PL621 / PL621E

User's Manual

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Notices

This user manual is intended for administrators and users of the PiXORD Network Camera, including instructions for using and managing the camera on your network. The use of surveillance devices may be prohibited by law in your country. It is the user's responsibility to ensure that the operation of such devices is legal before installing this unit for its intended use.

Before the Network Camera is installed, all the safety and operating instructions should be carefully read and followed to avoid damage due to faulty assembly and installation. This also ensures the product is used properly as intended.

Heed all warnings

- **Do not drop or strike this equipment**
  Sensitive electronics inside the camera are vulnerable to excessive strike.
- **Do not install the equipment near any flames or heat sources**
  Excessive heat could damage this equipment.
- **Do not cover cloth or to install this equipment in poorly ventilated places.**
  Overheating could damage this equipment.
- **Do not expose this equipment to rain or moisture. Do not touch the power connection with wet hands**
  Risk of short circuit, electric shock or fire
- **Do not damage the power cord or leave it under pressure**
  Risk of fire or shock circuit
- **To reduce the risk of electric shock, do not remove the Cover (or Back).**
  No user-serviceable parts inside. Misusage, improper, and negligence could damage this equipment. Need to refer servicing to qualified service personnel.
- **Do not continue to operate if there appears to be fault.**
  If the unit ceases to function, contact qualified service personnel for help.
- **All work related to the installation of this product should be made by qualified service personnel or system installers.**

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Support

If you require any technical assistance, please contact your PiXORD reseller. You can connect to the Internet PiXORD's website: www.pixord.com for below information,

- Download user documentation and firmware updates at PiXORD Support (http://www.pixord.com/support/support.asp)
- Find answers to resolved problems in the FAQ database. Or contact our FAE at technical support (http://www.pixord.com/contact2.asp)

Introduction

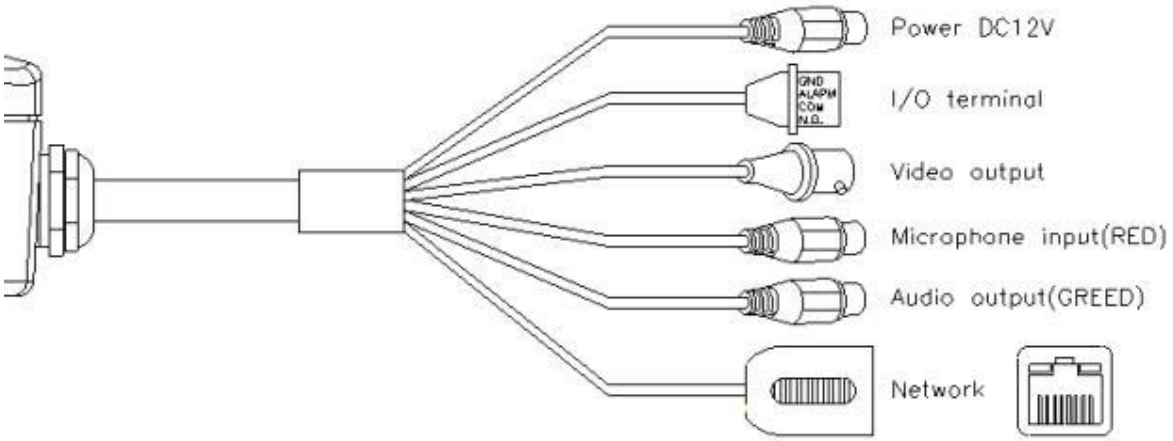
PiXORD PL621 Network Camera delivers superior H.264-AVC performance, state of the art design and function. PL621 is specifically adapted for maximum performance indoor applications, such as commercial, banking, government buildings, schools, universities and airports.

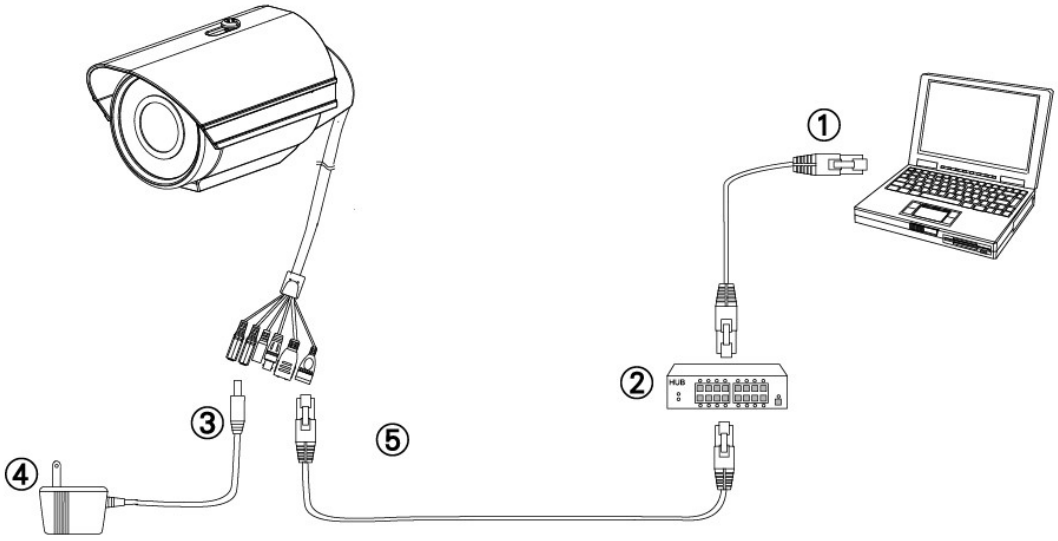
H.264-AVC video compression can lower bandwidth and storage requirements without compromising image quality; Motion JPEG is supported for increased flexibility, as well as multiple independent video streaming.

PL621 value-added features include; on-board video motion detection, SD slot for storage recording, and two-way audio. P-600 PoE available, full PoE (IEEE-802.3af) feature supplies power to the camera via the network, eliminating the need for power cables, reducing installation costs and complexity. Consequently, PL621 is “Best in Class” for maximum performance IP video surveillance systems, demanding superior image quality, ease of installation, and intelligent video capabilities.

Installation

1. Hardware Connection





1. Prepare a PC with Ethernet link to the network
2. Connect LAN port (RJ45) of the camera to a network switch/hub
3. Connect power jack
4. Ensure the power adaptor specification matches the power system (110V or 220V) and connect the adaptor to the outlet
5. Check LED status (Power/Network)

2. Software Installation

The following software is necessary for the proper display and use of the PL621 from the Web site. The software will be taken from the Software Package CD.

IP Installer

The IP Installer is used to locate and configure network cameras and video servers on the LAN. This utility is useful for conveniently configuring the network settings of the device, or for finding a device once the network settings have been modified.

To install the IP Installer, from the Software Package CD UI, select IP installer, then follow the on screen instructions.

XVID Codec

An H.264 codec is applied for displaying the video stream and playing the recoded AVI files. If the video stream can't be displayed or the recorded AVI files can't be play on PC, install this software from the Software Package CD.

VLC

Though not necessary, this can be used for viewing the streaming without a Web browser.

3. Network Configuration

IP Installer is a utility that provides an easier, more efficient way to configure the IP address and network settings of the devices. It even provides a convenient way to set the network settings for multiple devices simultaneously using the batch setting function. Moreover, IP Installer can save the network settings for all devices as a backup and restore them when necessary.

Preparation before IP Assignment

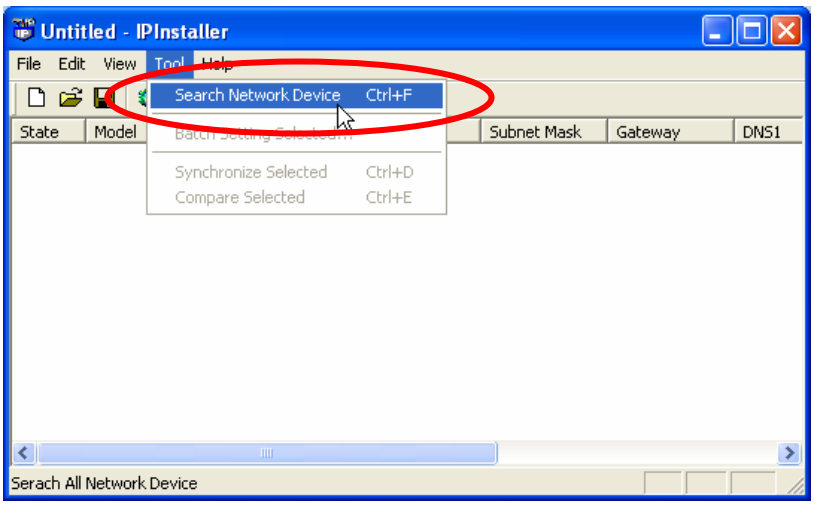
1. Always consult your network administrator before assigning an IP address to your server in order to avoid using a previously assigned IP address.
2. Ensure the PL621 is powered on and correctly connected to the network.
3. MAC Address: Each device has a unique Ethernet address (MAC address) shown on the label of the device as the serial number (S/N) with 12 digits (e.g. 000429-XXXXXX).

4. Although the IP Installer is able to find and configure any PL621 in the LAN except those that are behind a router, it is a good idea to set the host PC to the same subnet. In order to connect to the Web-based user interface of the camera, the host PC must be in the same subnet. For more information about subnets, please consult your network administrator.

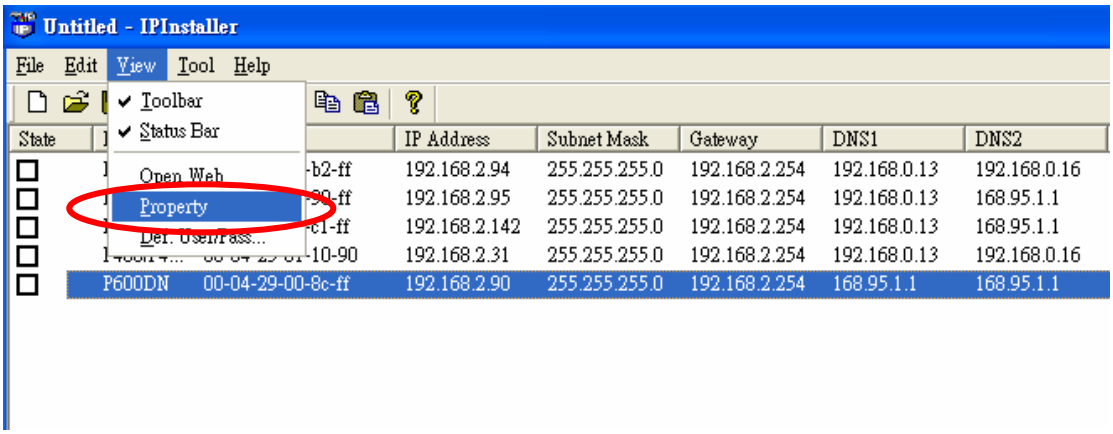
Using IP Installer to Assign an IP Address to PL621

1. Once IP Installer has been successfully installed on the PC, double click the IP Installer icon on the desktop, or select it from Start > Programs > IP Installer > IP Installer > Launch IP Installer.

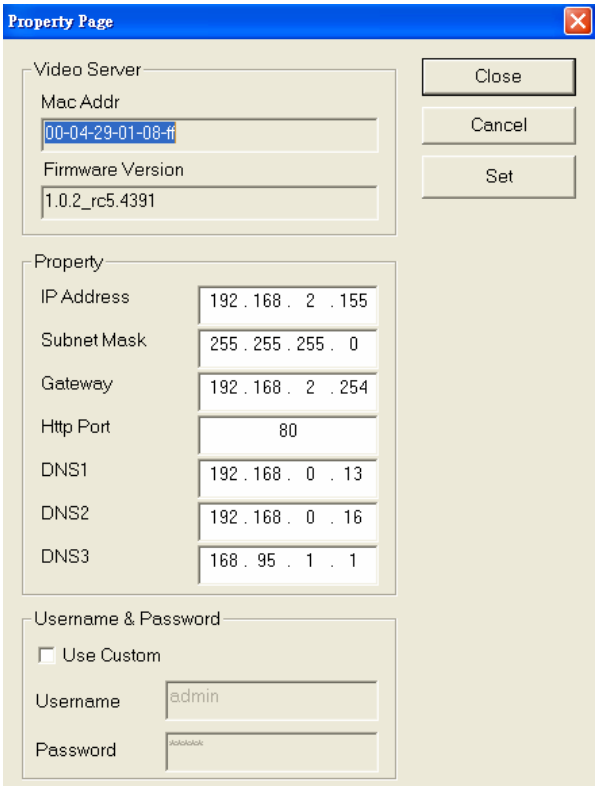
2. Click the menu bar Tool > Search Network Device to search the device in the LAN.



3. From the list, select the device with the MAC Address that corresponds to the device that is to be configured. The MAC Address is identical to the unit's S/N (Serial Number).
4. Double click the item to open the Property Page for the selected device or click the menu bar View > Property.



5. After filling in the properties, click [Set] button to complete the configuration settings in the remote device while saving configuration in the PC. If click [Close] button, the configuration is only be saved in the PC.



Open the Web-based UI of the Selected camera

1. To access the Web-based UI of the selected unit, run the View > Open Web on the menu bar.
2. If the device has been configured correctly, the default Web browser will open to the home page of the selected device.
3. If you find your browser is opened and automatically connected to the camera Home Page, it means you've assigned an IP Address to the unit successfully. Now you can close the IP Installer and start to use your camera.

Verify and Complete the Installation from Your Browser

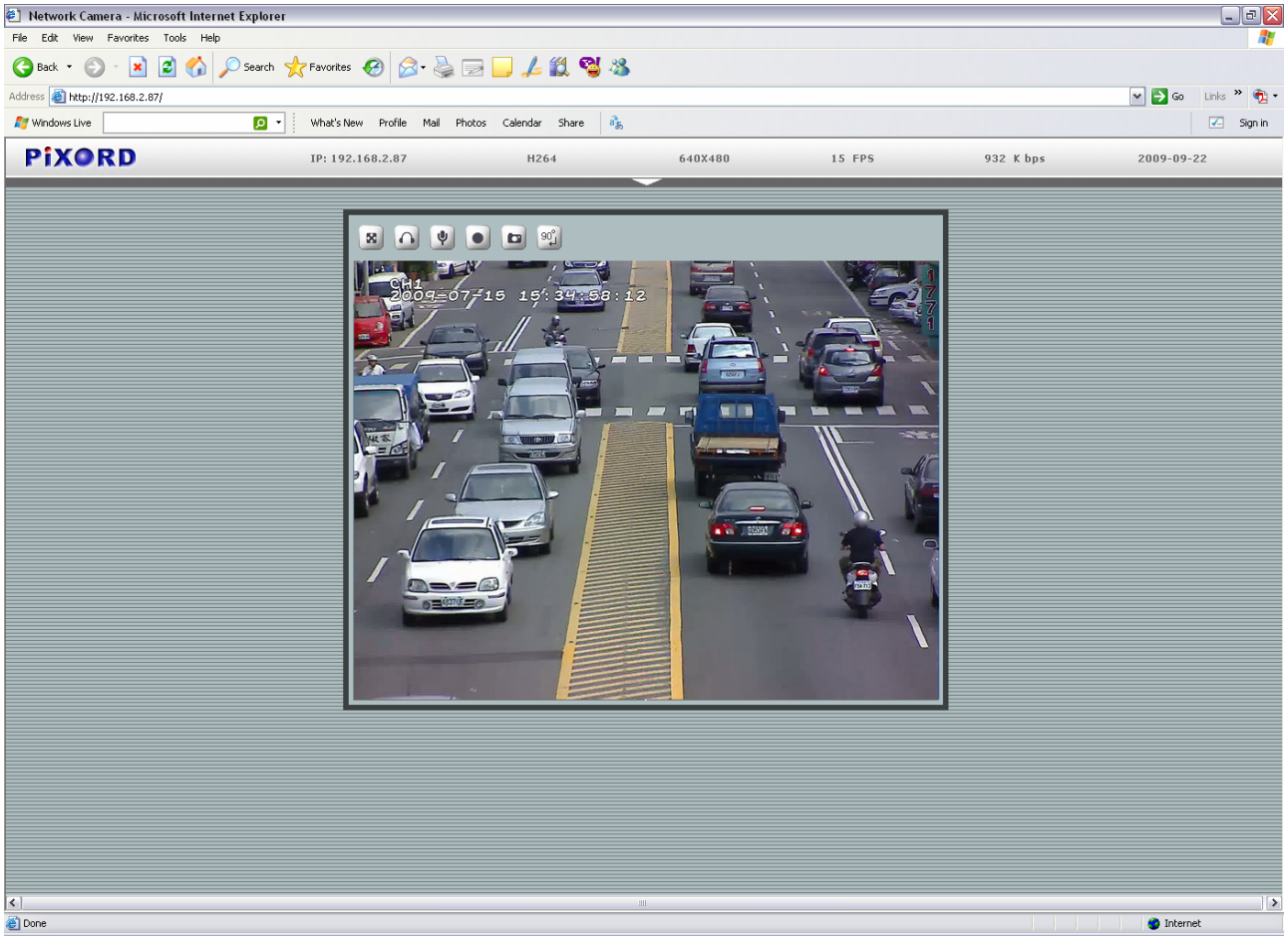
When browsing the Home Page at the first time with the Microsoft Internet Explorer ™, you must temporarily lower your security settings to perform a one-time-only installation of the ActiveX component onto your workstation, as described below:

1. From the Tools menu, select [Internet Options]
2. Click the [Security] tab and then click [Custom Level] button to see your current security settings.
3. Set the security level to Low and click [OK].
4. Type the URL or IP address of your camera into the Address field.
5. A dialog box will pop up asking if the ActiveX control should be installed. Click [Yes] to start the installation.

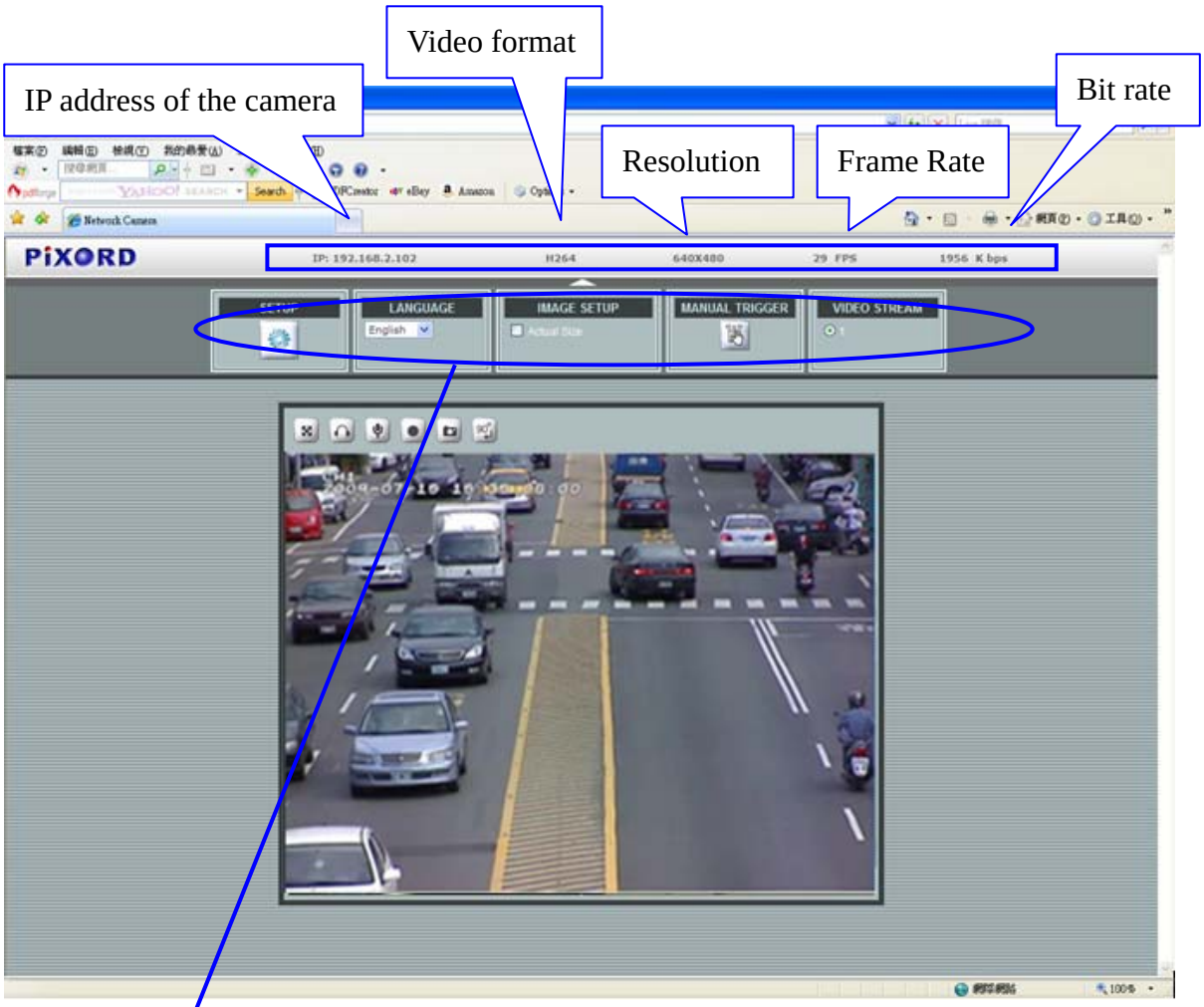
Once the ActiveX installation is complete, return the security settings to their original value, as noted above.

Using the Web UI

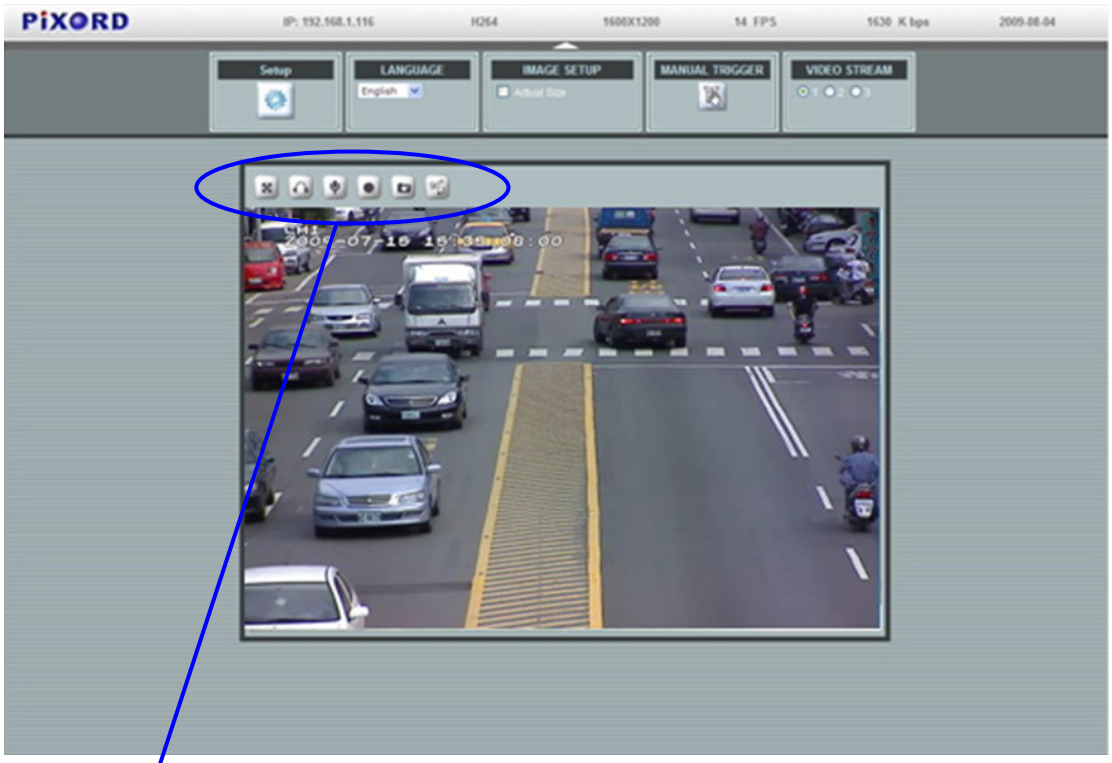
Start your Web browser and enter the URL or IP address in the Address field. The Home page of the camera is now displayed.



1. Live View



Button	Description
SETUP	Click for more general/advance camera settings
LANGUAGE English	Select languages among English, traditional Chinese and simplify Chinese
IMAGE SETUP Actual Size	Check actual size to view the actual size (resolution) of the image
MANUAL TRIGGER	Click to trigger the alarm manually
VIDEO STREAM 1 2 3	Choose among the 3 streams for viewing



Button	Description
	Full screen
	Listen the audio input from local end
	Talk function
	Record instant live video
	Snapshot the image
	Rotate image 90 degrees clockwise

Configuration Pages List

Video

- General
- Advance
- External Video Source

Camera:

- General
- Advance

Event

- Event Server
- Motion Detection
- I/O Ports
- Event Configuration

Schedule

- General
- Storage

Network

- General
- Advance
- SMTP (E-mail)
- DDNS

System

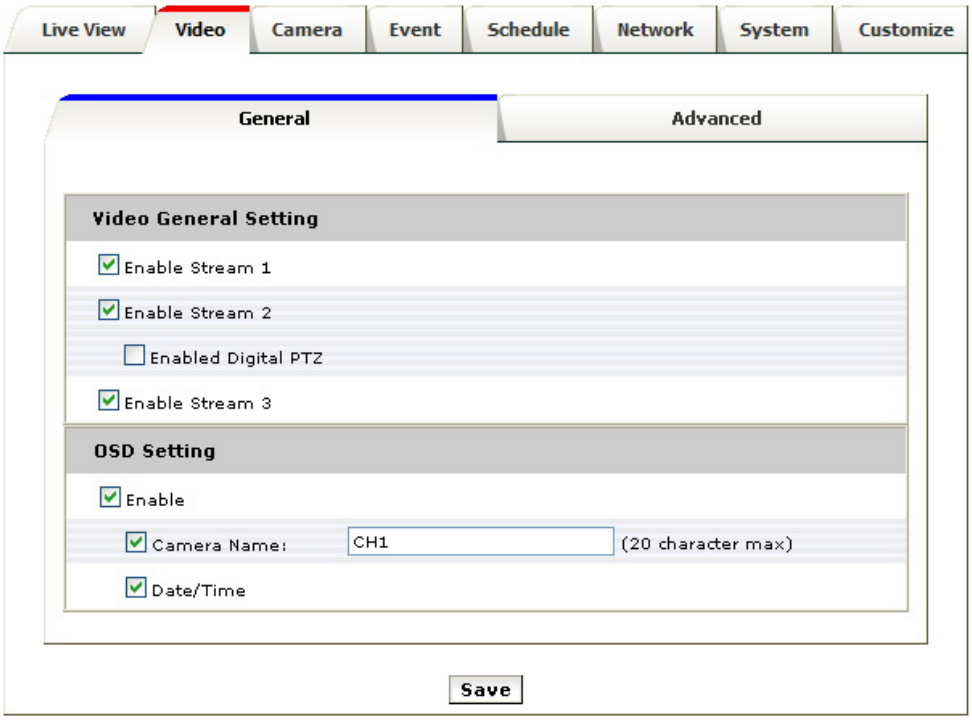
- Information
- User
- Date & Time
- Server Maintenance
- Log Service

Customize

- Style Layout

2. Video

General

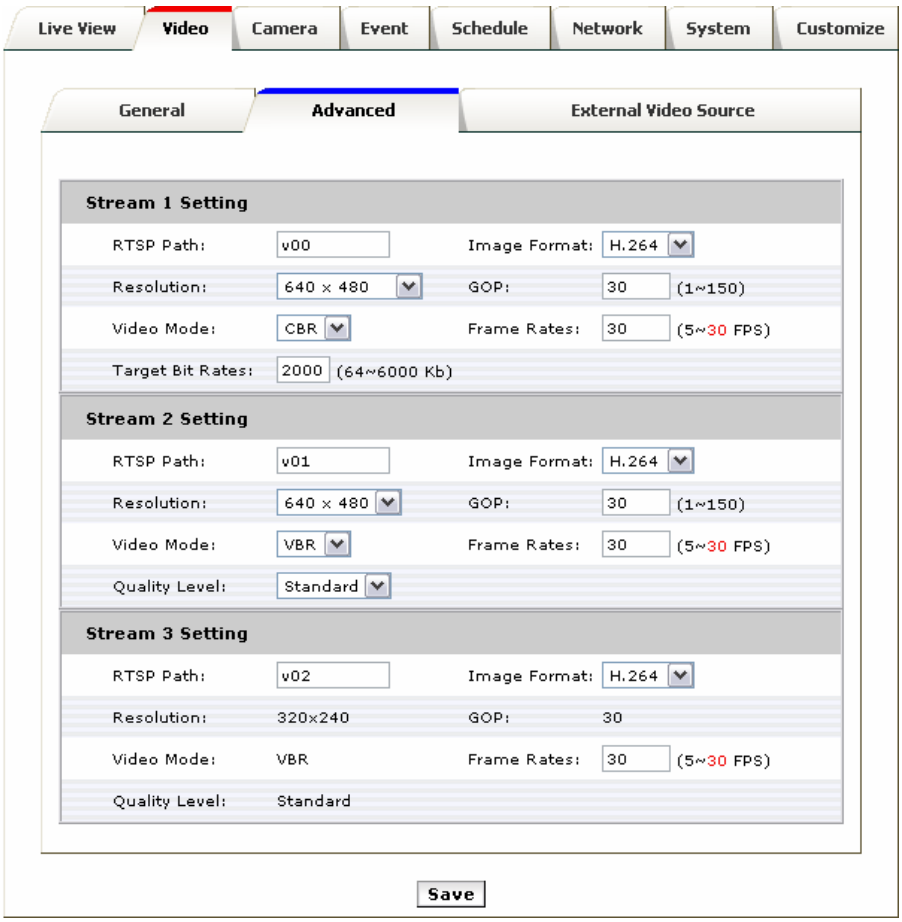


Video General Setting: Check each box to enable streams (max 3) for live viewing

Note: Digital PTZ is only available with stream 2

OSD Setting: Enable OSD to display camera name and date/time on the image

Advanced



Stream 1 Setting:

- RTSP Path: It is the stream ID used for RTSP client streaming connection, such as VLC player.
- Resolution: Choose image size from 320x240 to 1600x1200
- Video Mode: Choose between variable bit rate (VBR) and constant bit rate (CBR)

  VBR-> Choose quality level from best to standard

  CBR-> Choose target bit rate range from 64 to 6000kb
- Image Format: 2 kinds of format to choose from; MJPEG and H.264
- GOP: Group of pictures
- Frame Rates (FPS): Choose the number of frames to display per second

  With resolution 1600x1200, FPS can only set up to 15FPS. The rest can set up to 30FPS.

Stream 2 Setting:

Configuration of stream 2 is the same as stream 1.

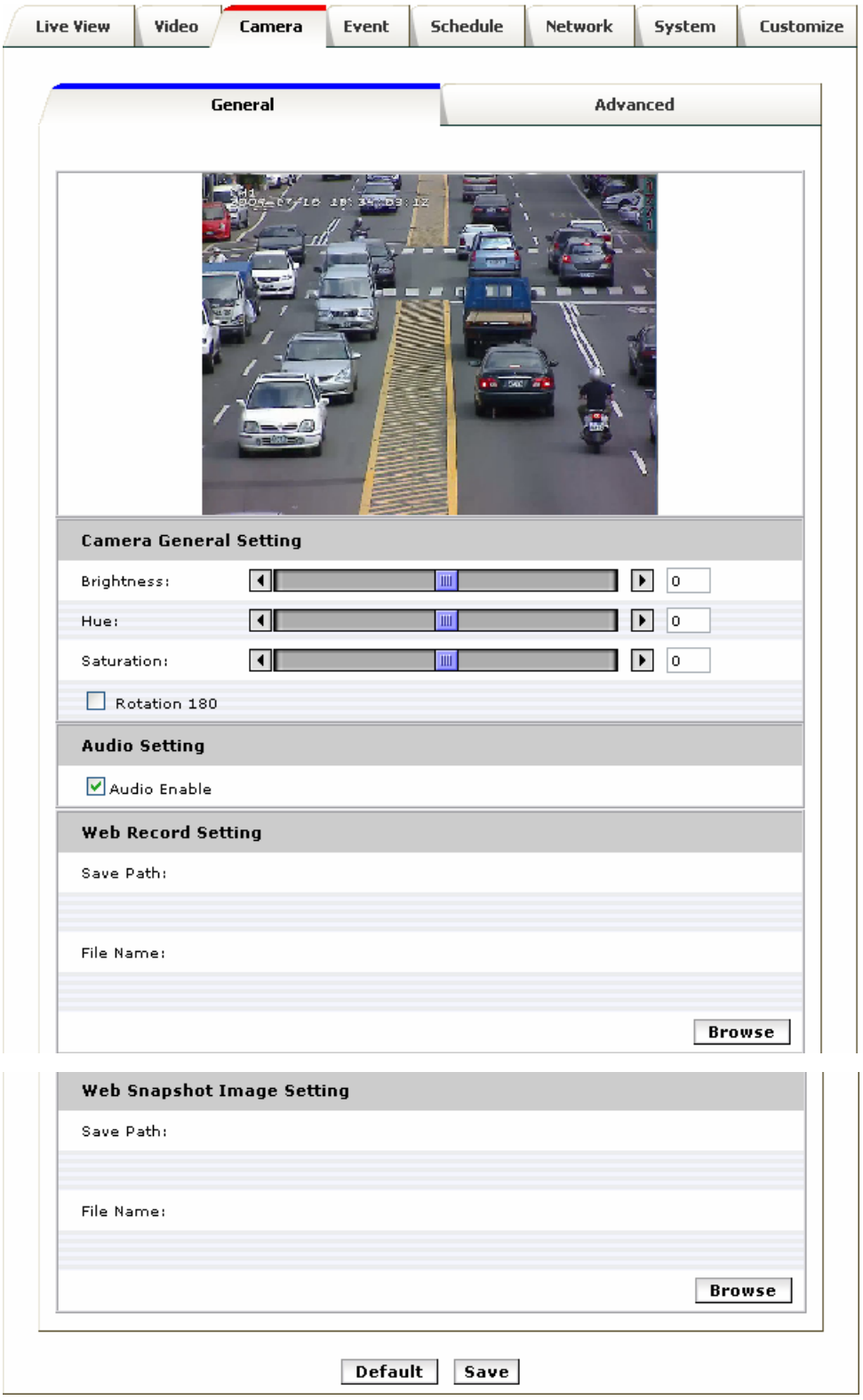
Note: Resolution can only be set to 320x240 or 640x480

Stream 3 Setting:

Only RTSP path, image format and frame rate can be adjusted, the rest of the settings are fixed.

3. Camera

General



Camera General Setting:

- Brightness, hue and saturation: Adjust the image for a better view
- Rotation 180: Rotate the image by 180 degrees, so that the image becomes upside down. This function is useful when camera device must be physically installed in vertically reversed direction.

Audio Setting:

- Audio Enable: Turn on/off the audio

Web Record Setting:

- Save Path / File name: Click on the “Browse” button to select the desired path to save as well as naming the video file.

Web Snapshot Image Setting:

- Save Path / File name: Click on the “Browse” button to select the desired path to save as well as naming the snapshot

Default:

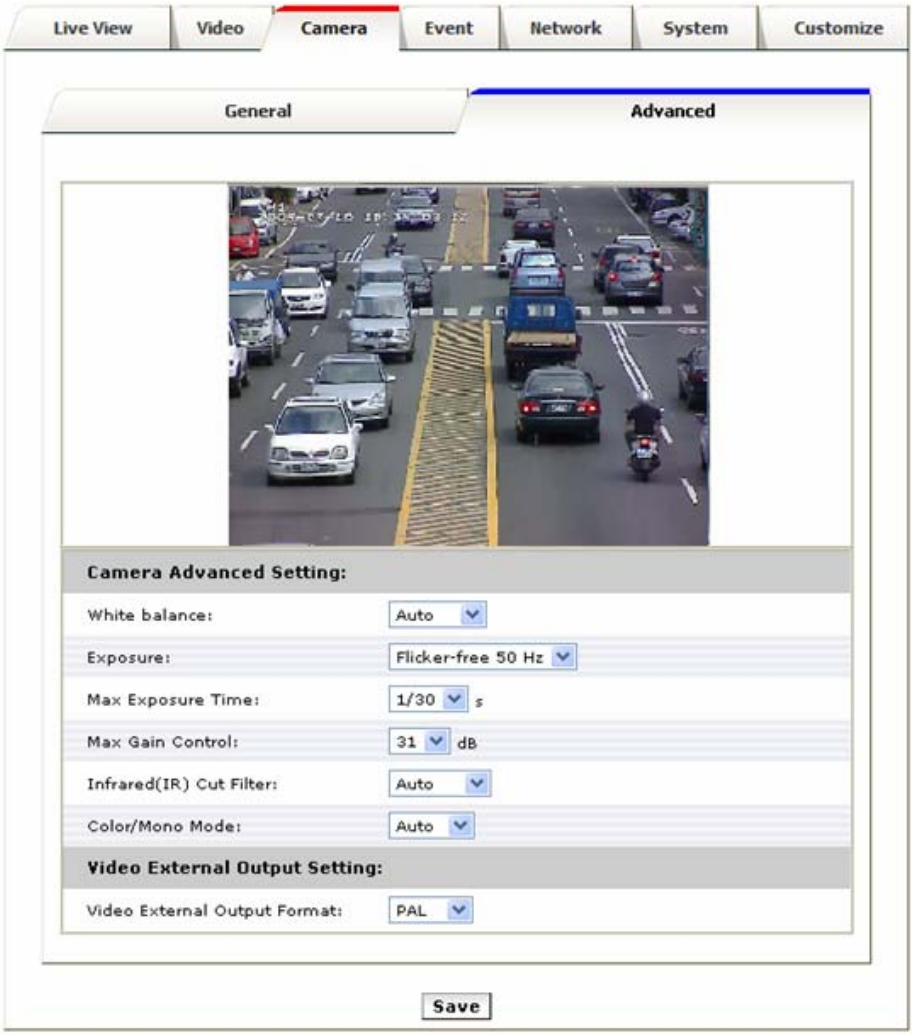
- Set **[camera general setting]** and **[audio setting]** back to default

Note: Will not change the configuration of **[Web Record Setting]** and **[web Snapshot Image Setting]**

Save:

- Save the changes that have been made

Advance



White balance: Adjust the white balance according to the environment

Exposure: Select the exposure frequency

Max Exposure Time: Increase / reduce the exposure time for lens

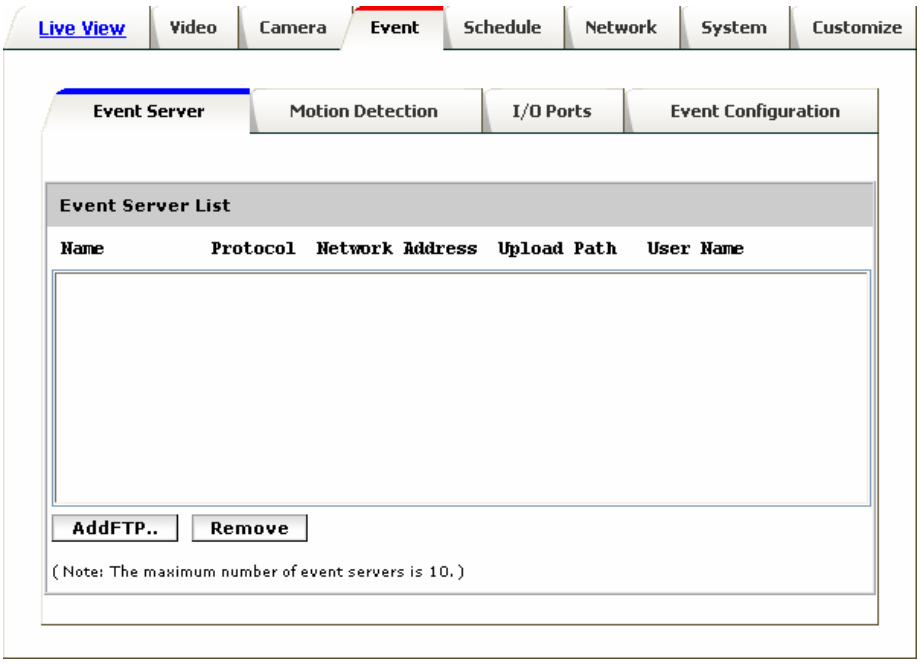
Max Gain Control: image at low light control on how much noises are allowed

Infrared (IR) Cut Filter: IR will activate depending on the light sensor, it is for better vision at night

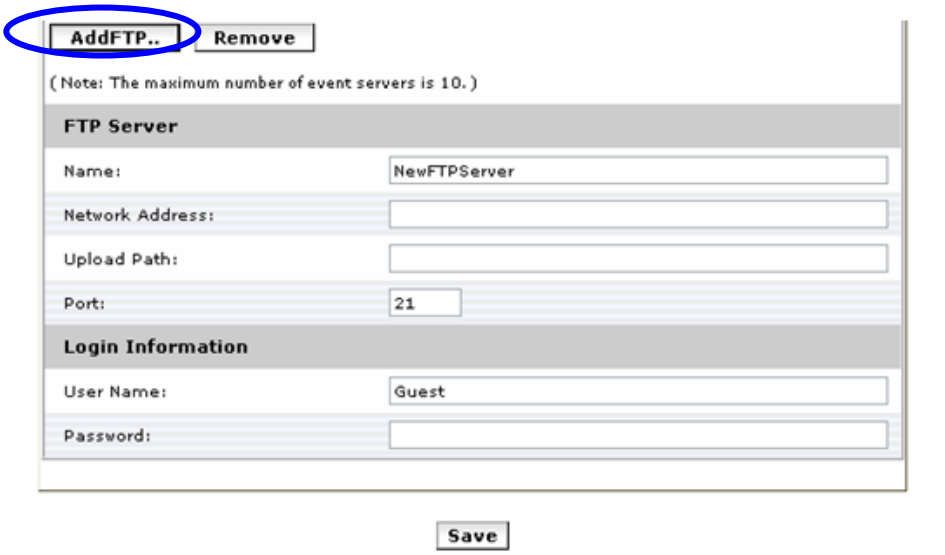
Color / Mono Mode: Switch among color, mono or auto mode

Video External Output Format: Adjust the format according to the environment

4. Event



Event Server



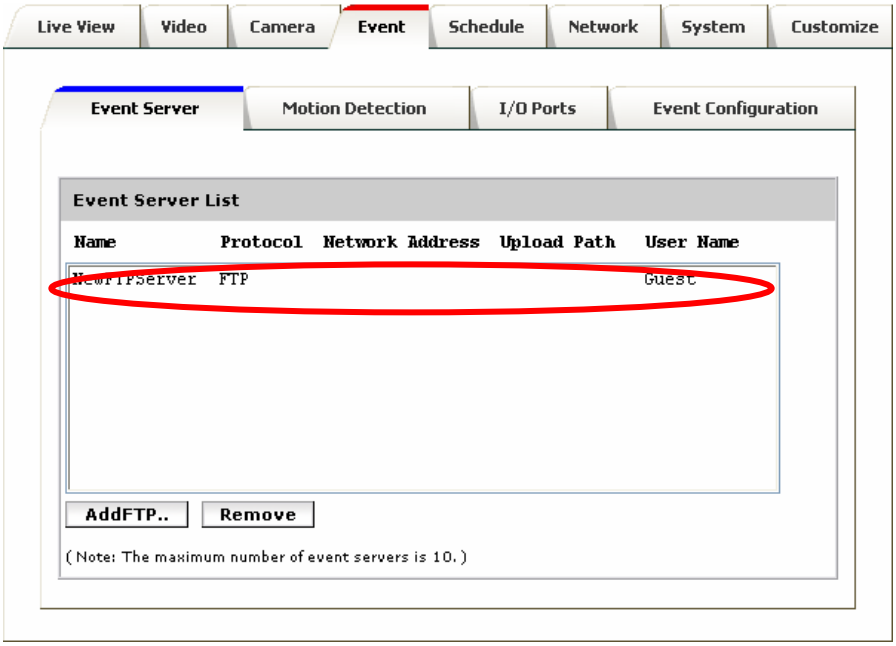
Click on the **[Add FTP]** to expand FTP server setting

FTP Server:

- Name: Give a name for the FTP server
- Network Address: Input the network address of the FTP server
- Upload Path: Choose the desired upload path for events
- Port: Input the port number of the FTP server

Login Information:

- Username / Password: Input the username and password of the FTP



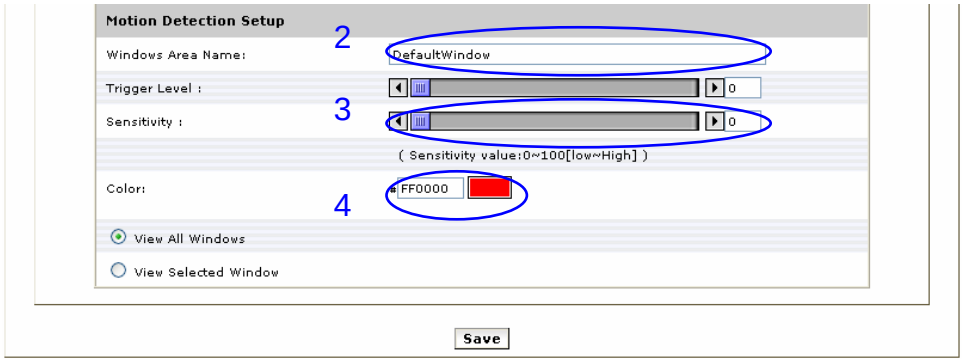
Click **[Remove]** to delete selected event servers (circled in red)

Motion Detection

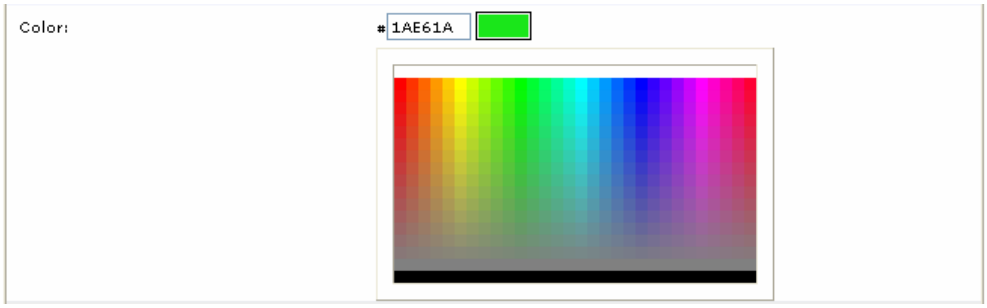
To add a motion detection area:

1. Click on **[Add]** to set up a detection area

   (Set up panel will be expanded)



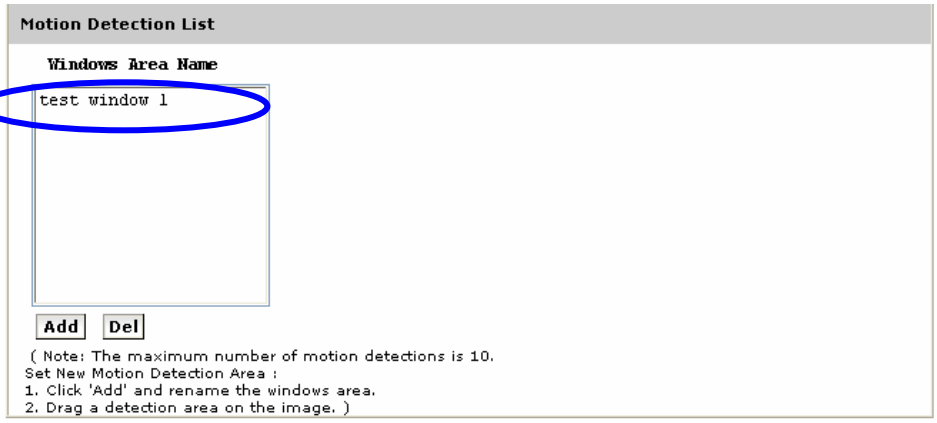
2. Give a name to this window area
3. Select the trigger level and sensitivity for this detection window (0~100, low~high)
4. Select color for detection window



5. Draw detection window on the image

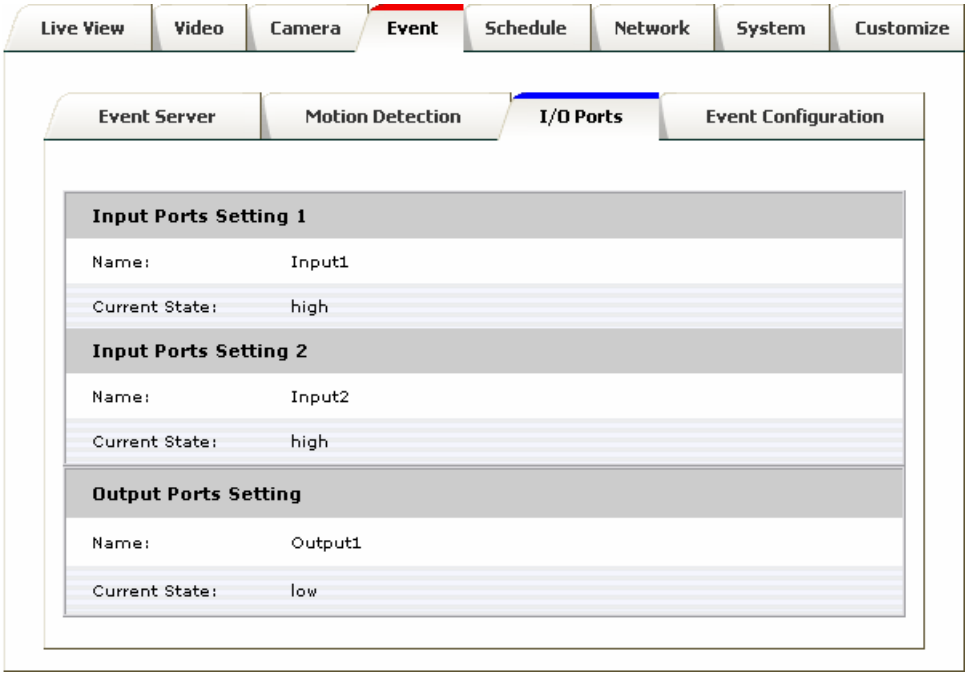
6. Once everything is done, click on **[Save]** to save the configuration made.

Configured detection window will be displayed in motion detection list (circle in blue)


Motion Detection List
Windows Area Name
test window 1
Add
Del
(Note: The maximum number of motion detections is 10.
Set New Motion Detection Area :
1. Click 'Add' and rename the windows area.
2. Drag a detection area on the image.)

Note: Maximum number of detection window is 10

I/O Ports



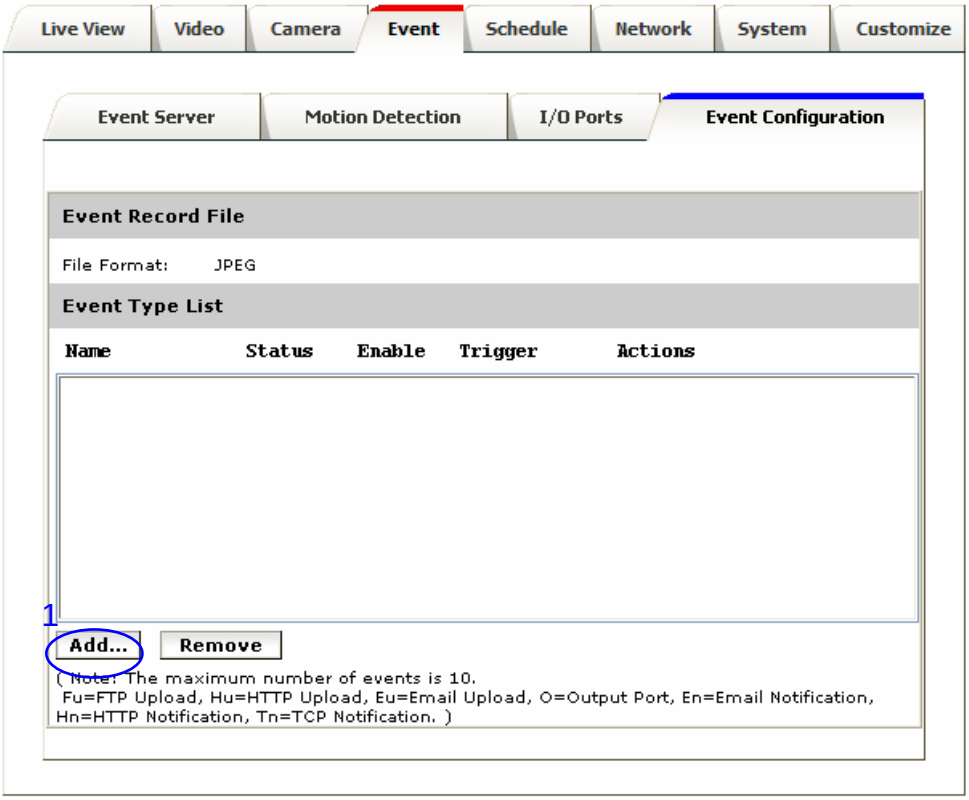
Input Ports Setting 1 and 2:

- Name: The name of Digital Input1/2
- Current State: Current Input state

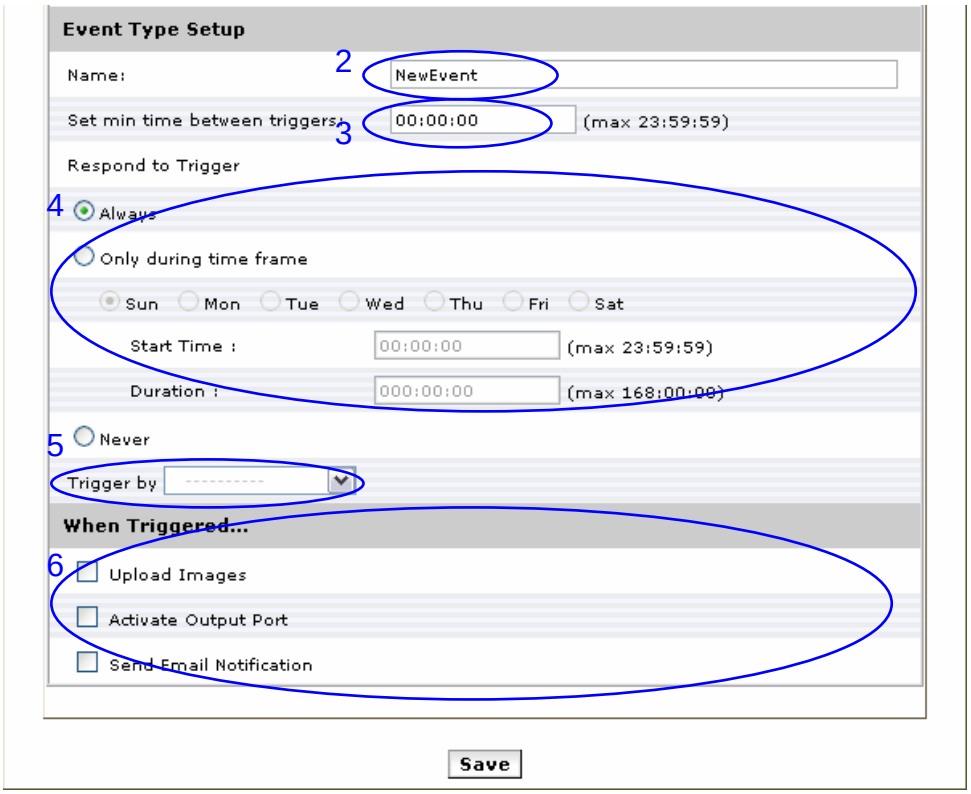
Output Ports Setting:

- Name: The name of relay output
- Current State: Current Output state

Event Configuration



To add an event trigger, click on **[Add]** and setup panel will be expanded



2. Give a name to this event.
3. Set the time interval between each trigger
4. Set the time period for the trigger. Choose “Always”, “During time frame” or “Never”

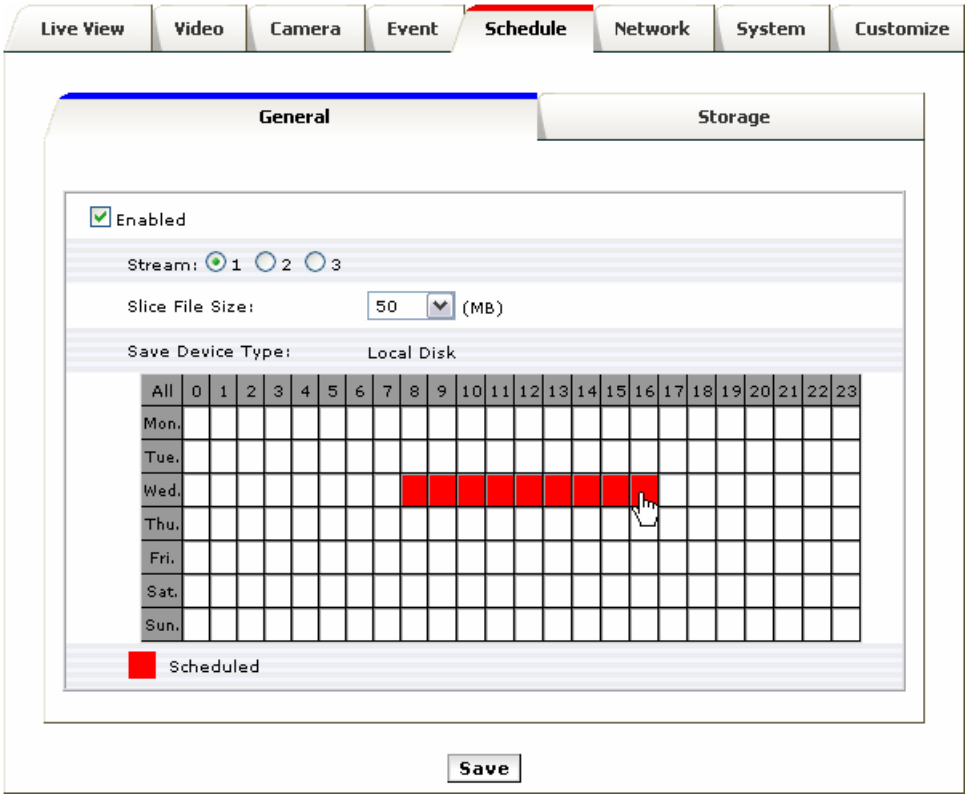
   During time frame: Choose a day and the starting time then configure the duration time (168hrs = 24x7).

   For example if duration time is set to 168(hrs), it is the same as choosing “Always”
5. Choose the triggering condition, “GPIN”, “Manual trigger”, “Motion detection” and “On boot”
6. Choose the triggered event. “Upload images”, “Active Output port”, “Send email notification”
7. Finally click on **[Save]** to save the configuration made.

5. Schedule

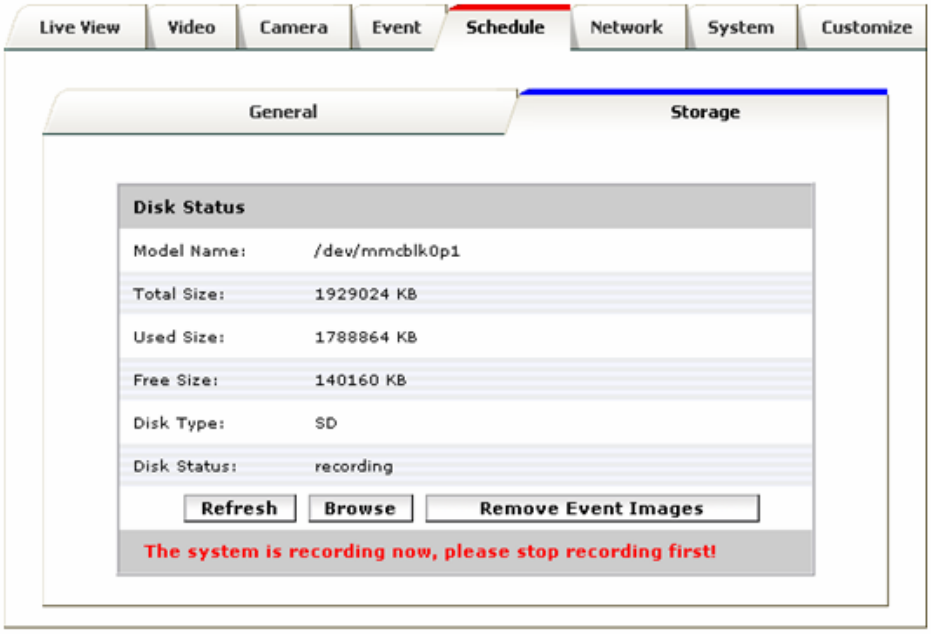
General

Define the day (specified by days of a week) and time (specified by each single hour) for that will be recording during the scheduled period. Note that only video data will be recorded. User can select which video stream should be recorded, and the size of each sliced file. When the check box is ticked and setting is saved, recording process starts. Recording files are saved to the SD storage.



Storage

Display the storage information, includes disk size info, type and status. The warning message shows when recording is on process; SD card should not be removed during the recording process.

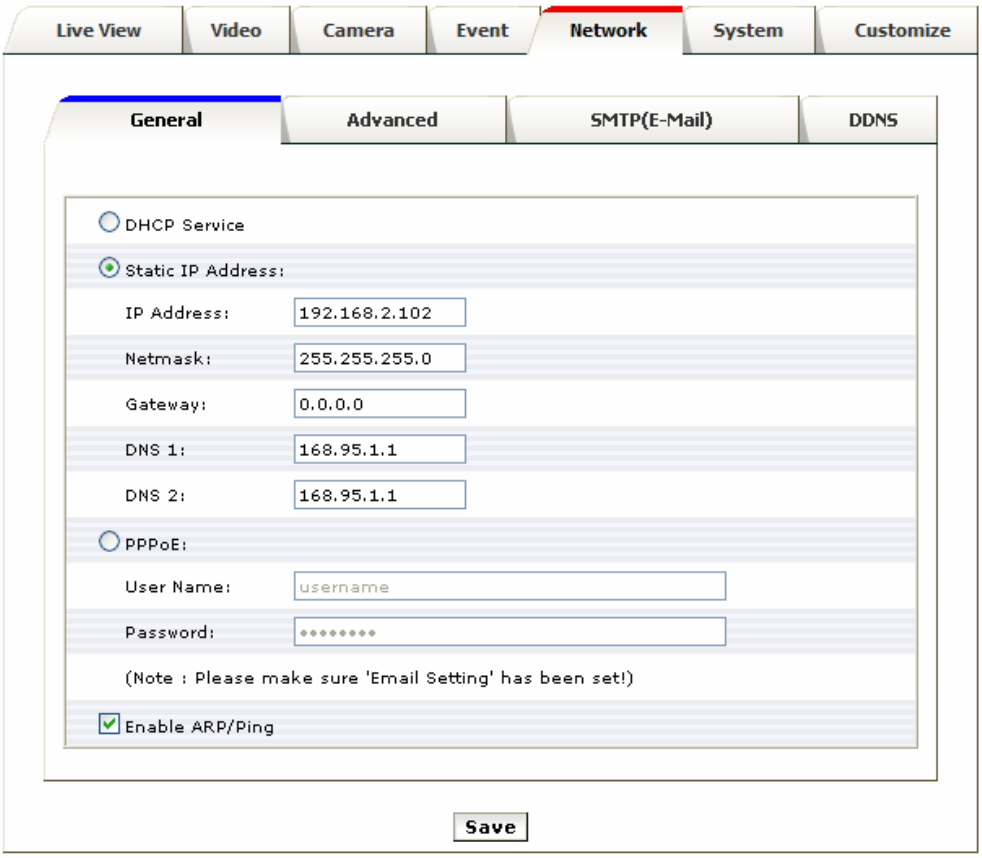


*It is the best to format the disk first before using it.

6. Network

General

Device IP configuration, includes DHCP, Static IP setting and PPPoE. “Enable ARP/Ping” enable device to accept ARP or ping packets from the network. Disable this option may provide extra security from intentional ping.



*After all settings are made please reboot the camera to activate PPPoE. You will receive email with IP address later.

Advanced

Enable or configure other network functions.

NTP: Configure a NTP (Network Time Protocol) server, so that the device system date and time can be synchronized with a specified Time Server. This configuration is provided for one of the potions of system date/time adjustment.

HTTP: set the HTTP port that will be applied for Web UI access.

RTSP: set the RTSP (Video) port for video data transmission.

HTTPS: Enable/Disable Http security function.

Bonjour: Enable Bonjour service, so that the device can be discovered with “Bonjour” service applied.

UPnP: Enable UPnP, so that the device can be discovered in an UPnP Compliant Network.

NAT Traversal: Enable NAT traversal, so that client from Internet can have access to the devices behind the Router.

Note: with UPnP enabled, the IP Sharing device (Router) capable of UPnP function will automatically be noticed with the device’s NAT port.

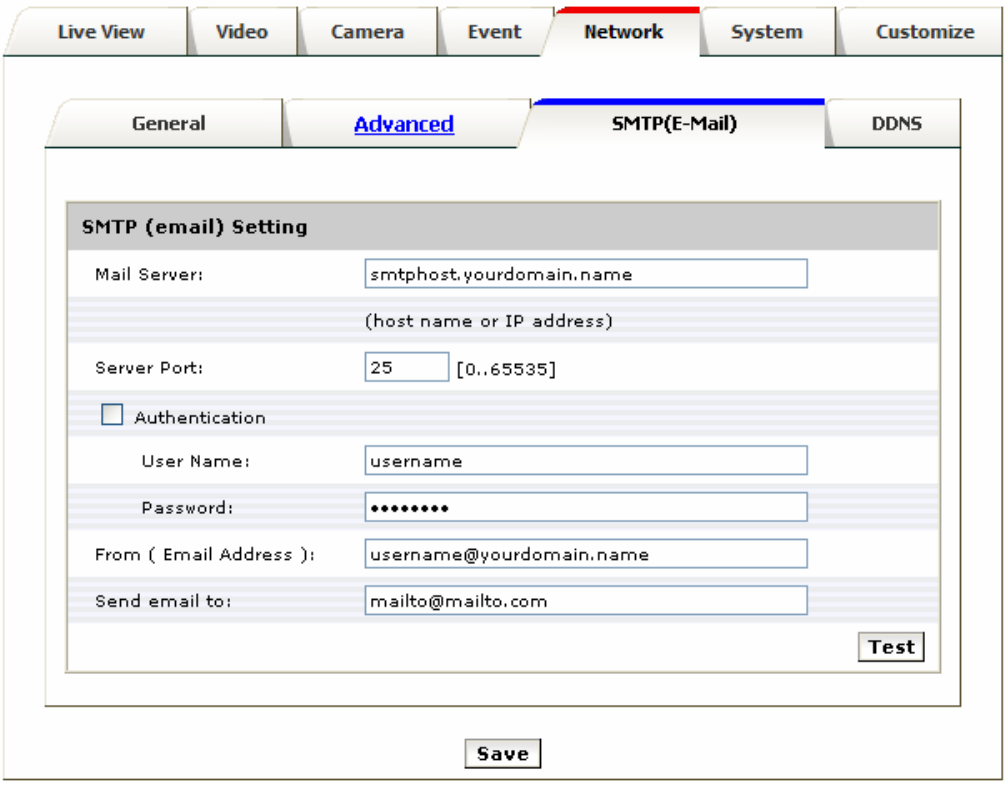
Live View
Video
Camera
Event
Network
System
Customize
General
Advanced
SMTP(E-Mail)
DDNS
NTP Configuration
Obtain NTP server address via DHCP
Use the following NTP server address:
Network address:
time.stdtime.gov.tw
(host name or IP address)
HTTP Setting
HTTP Port:
80
RTSP Setting
RTSP Port:
554
HTTPS Setting
Enable HTTPS
Bonjour Setting
Enable Bonjour
UPnP Notification
Enable UPnP
NAT Traversal Setting
Enable NAT Traversal
Save

SMTP (E-Mail)

Configure an email host in the device that will send email on behalf of the configured email account in a circumstance like sending an email notice to a specified mail address (Event Configuration).

Sender: Complete the Mail Server, Server Port, Authentication information (if required) and the sender email address.

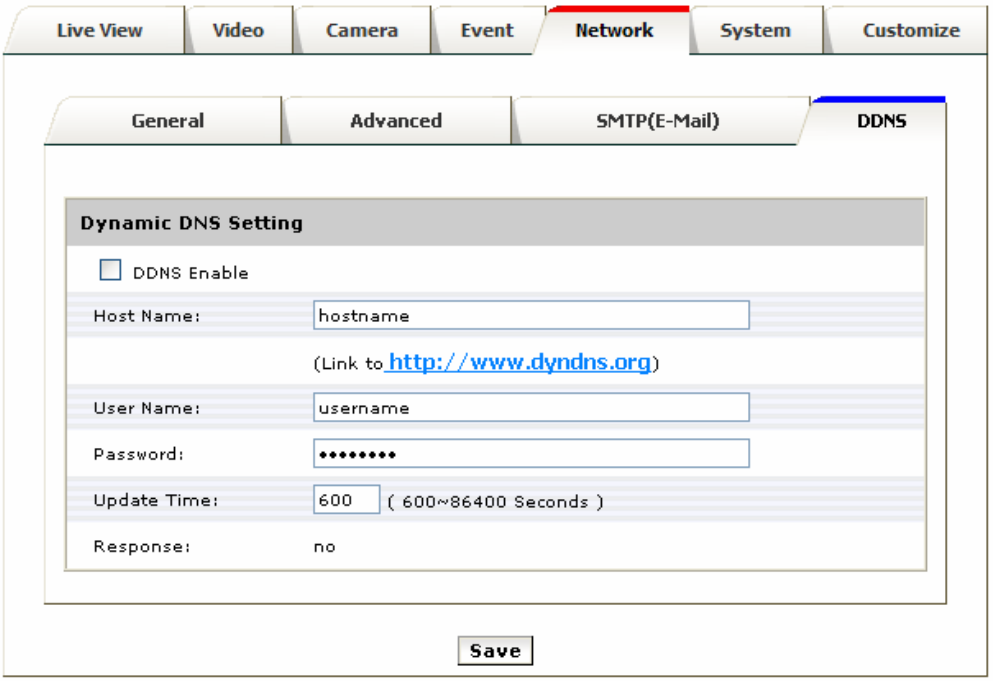
Receiver: the receiver email address



DDNS

Dynamic DNS configuration; the network device can be assigned with a host name by registering this service (Internet access required).

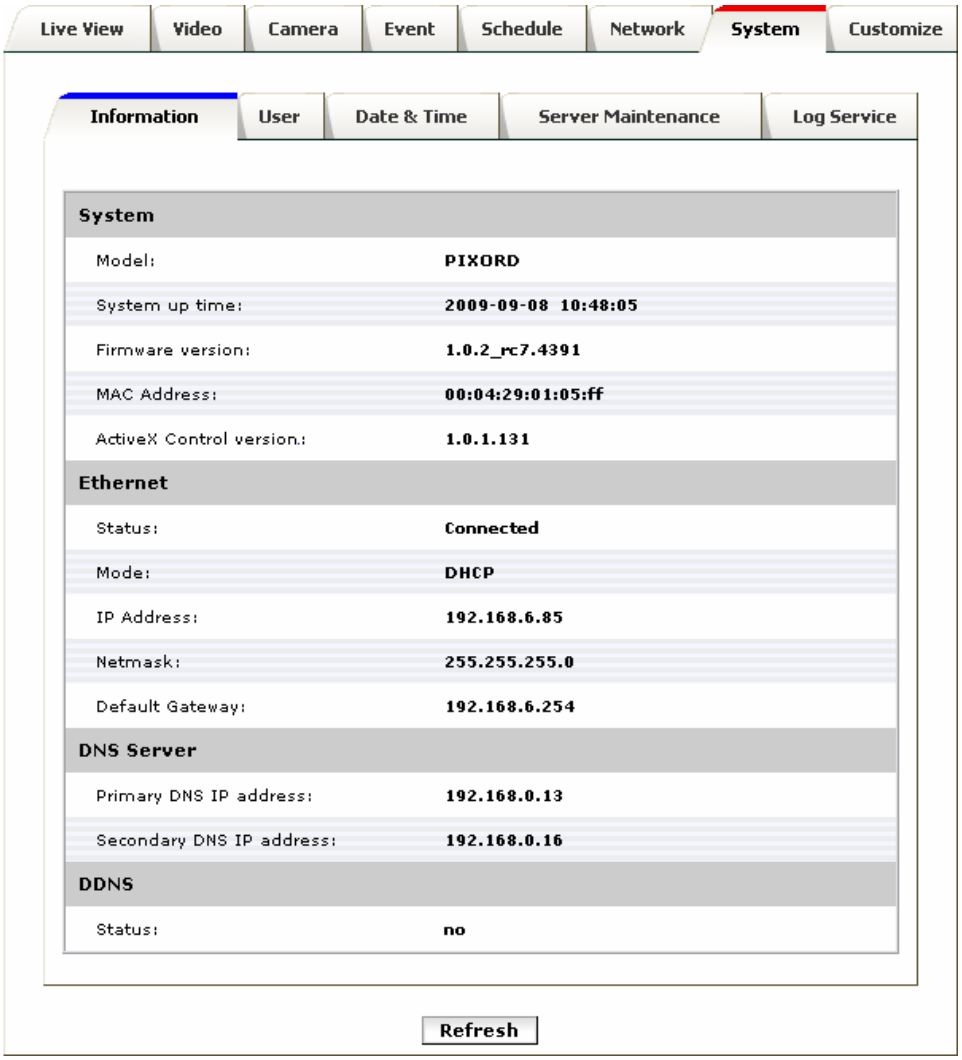
Host Name: Assigned name that will be used for access to the device
User Name/Password: Account authentication for logging to this service
Update Time: Periodically, the device updates its access info to sever in the configured time.
Response: the device responds the connection info.



7. System

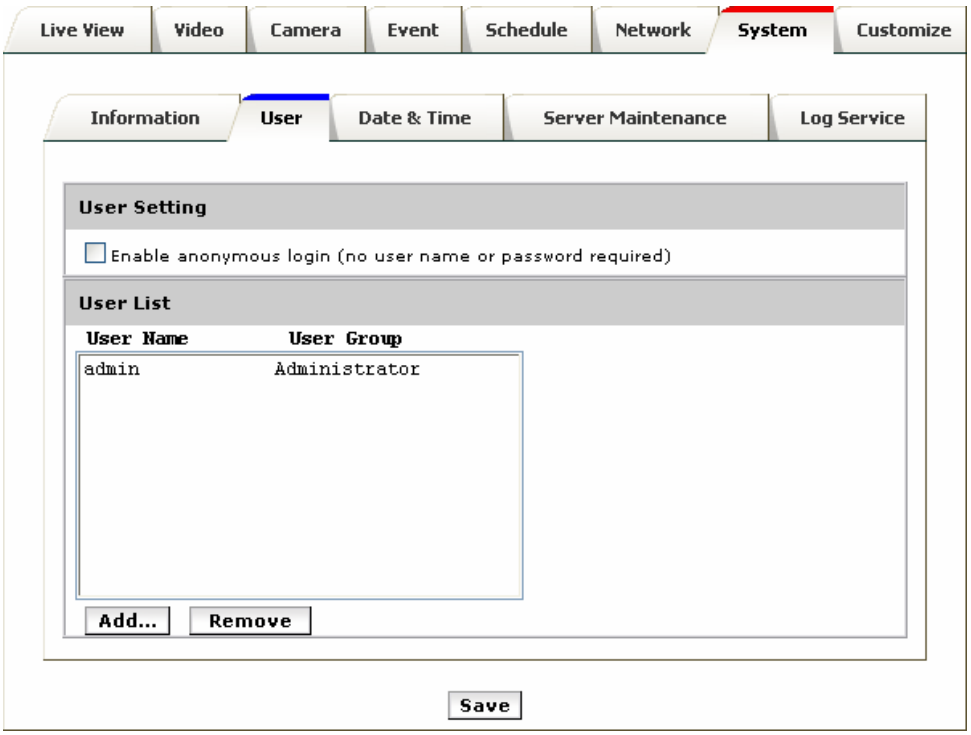
Information

Lists of System and Network configurations



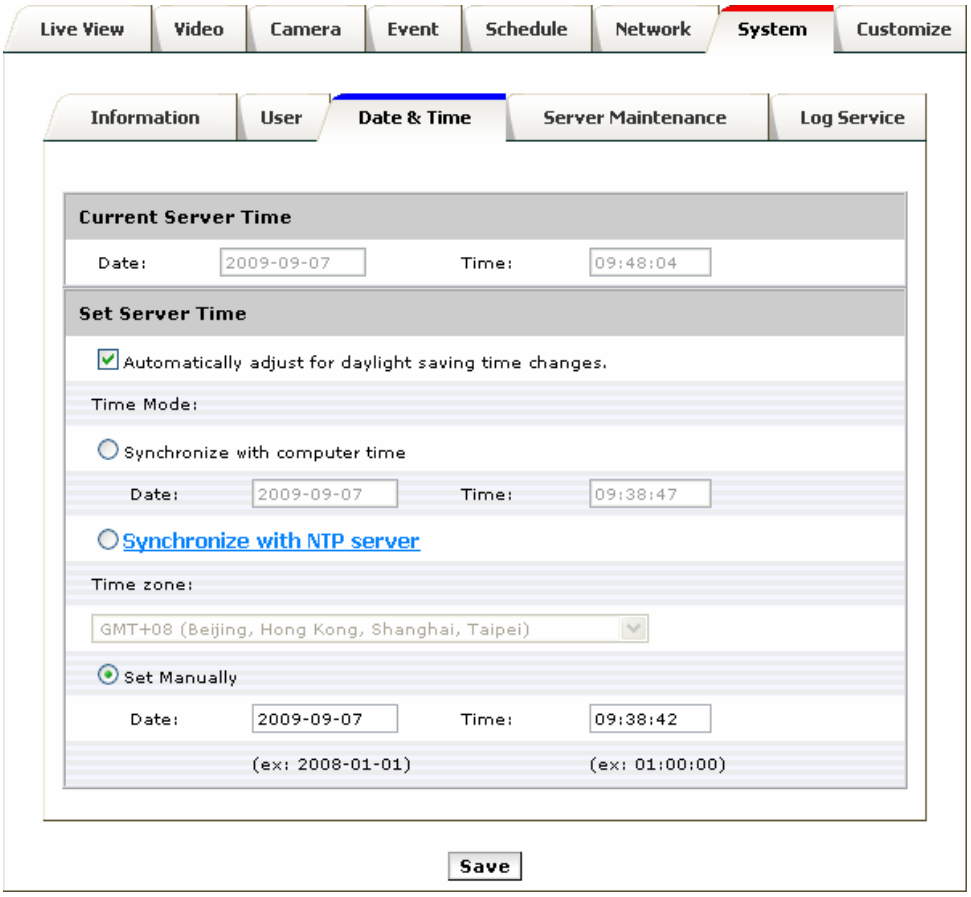
User

Login users for Web access and operations; authentication required. The Check box is for anonymous logging on to the live view page. Logging for further configurations will still require user name and password. Follow the conditions shown to add different users with different authority.



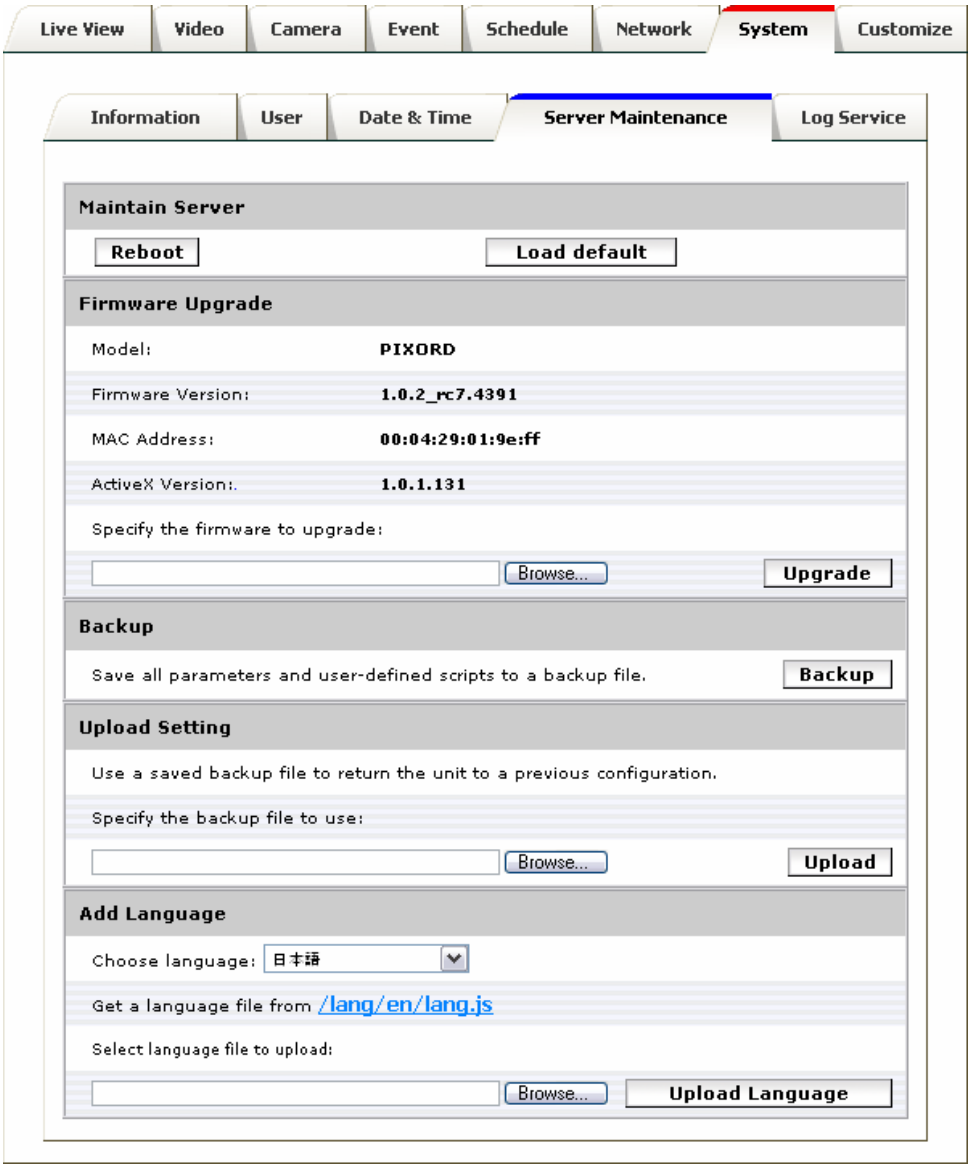
Date & Time

System date/time configuration. Options of synchronizing with PC and NTP server are provided for automatic adjustment.



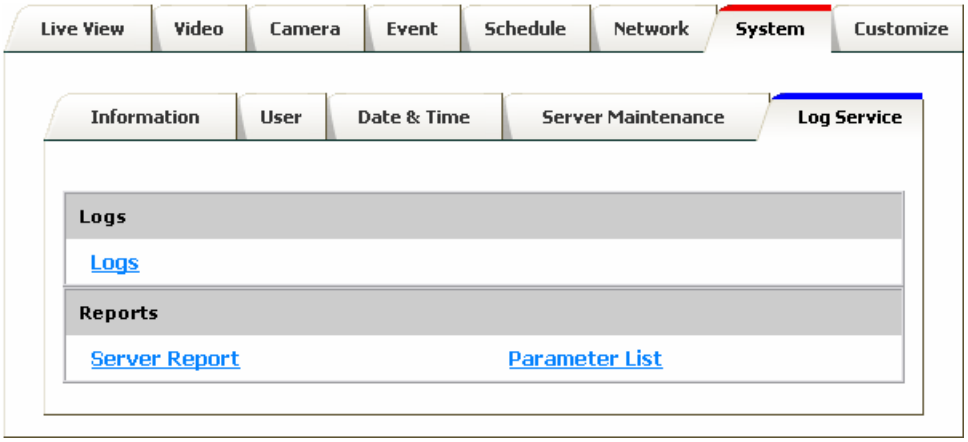
Server Maintenance

This page provides tool for system maintenance; Reboot and Load default settings, as well as functionalities of launching upgrade process, backup/restore user settings and language defines.



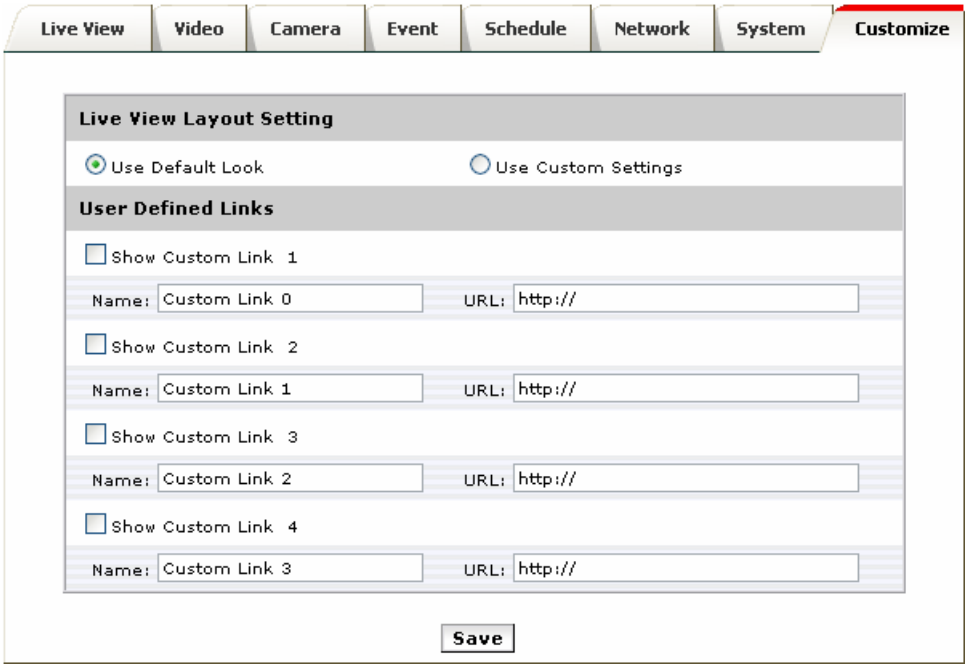
Log Service

Most system operations and / or process will be kept in a log system. The link provides the review of these records.



7. Customize

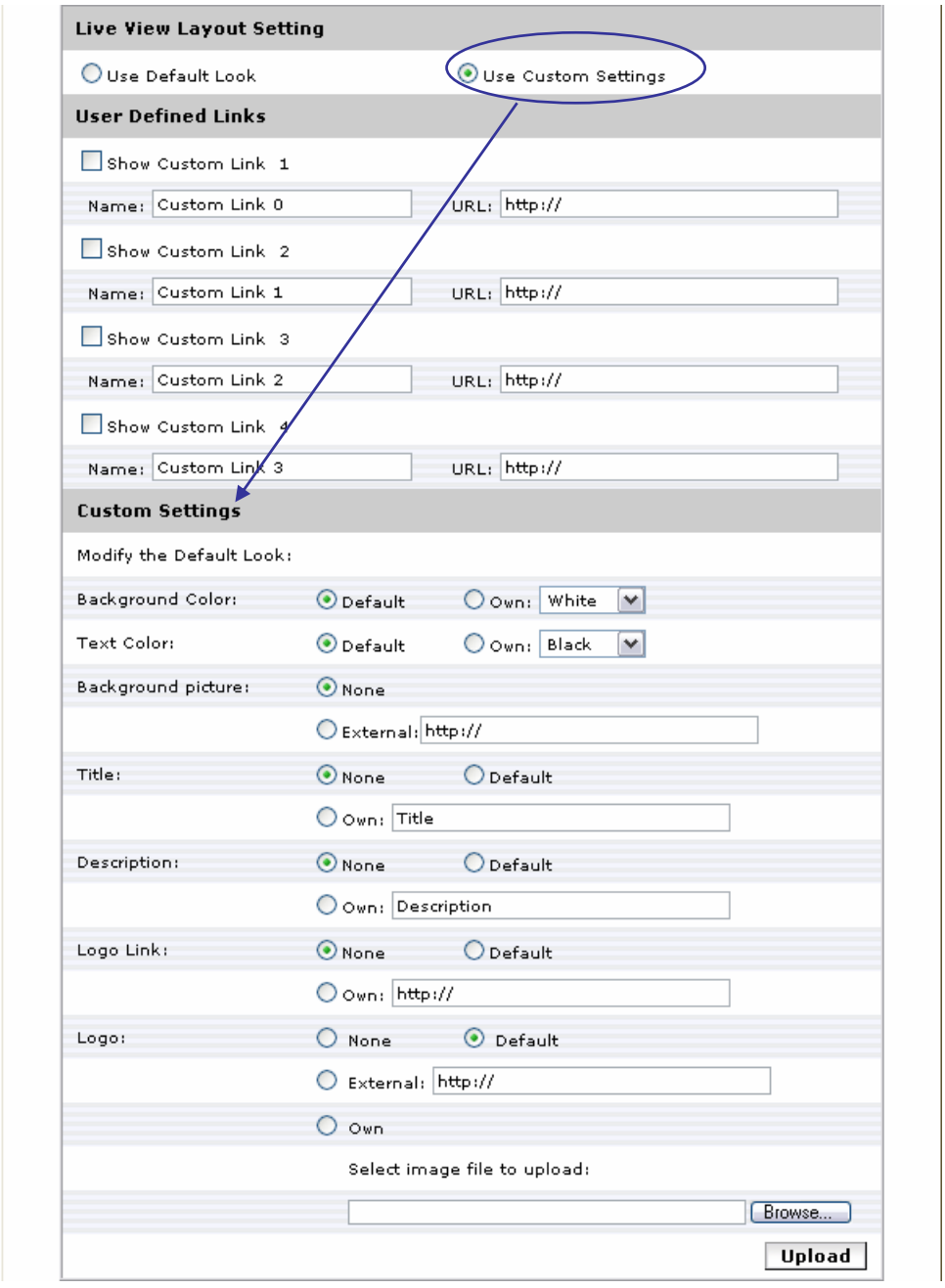
This page provides the function of adjusting the look of live view page. There are two types of layout settings; use default look or use custom settings.



Use Default Look: the default layout of live/configuration pages

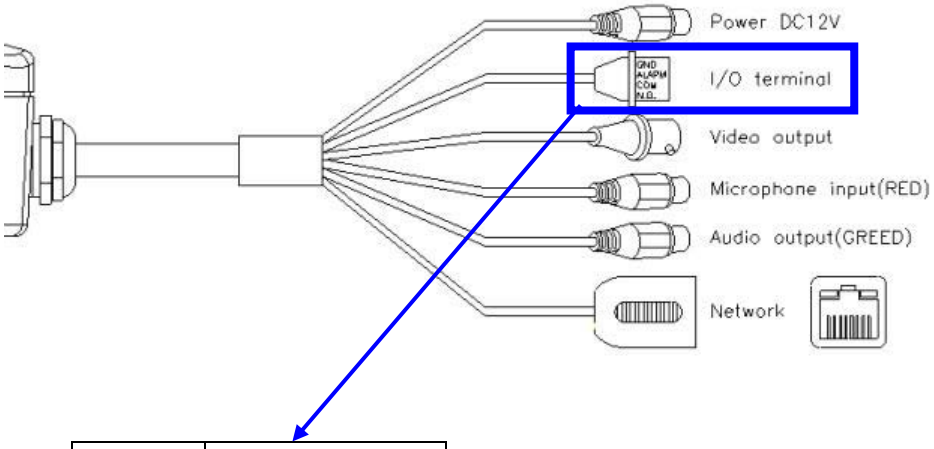
Use Defined Links: Web link(s) will be presented on the live page when enabled. It can be a link to another IP camera for instance, or other preferred web link.

Use Custom Settings: The modifications allowed are change of Background / Text Color, Background picture, Title, Description, Logo and etc.



FAQ

I/O Terminal Connector - Pin Assignment



Pin	Function
1	COMMON
2	RELAY_NO
3	DGND
4	DIGI input
5	DGND
6	Load default

Restore Factory Default

To restore factory default, please follow the steps:

1. Unplug the power jack to turn off the camera
2. Short pin 5 and pin 6 with a wire
3. Plug in the power jack to turn on the camera. The power LED will start flashing in a short while.
4. Break the short when the LED starts quick flashing. Wait for a few minutes the device should be set back to factory default.